

WHAT IS CLAIMED IS:

1. A switch of a network for switching packets comprising:

a plurality of fabrics which switch portions of packets;
and

a port card connected to the fabrics and the network for receiving packets from and sending packets to the network, the port card having a mechanism for tolerating whether any one of the plurality of fabrics has a failure and still sending correct packets to the network.

2. A switch as described in Claim 1 wherein the plurality of fabrics includes n fabrics which receive from and send to the port card portions of packets, where n is greater than or equal to 2 and is an integer, where one of the fabrics is a parity fabric which sends to and receives from the port card parity data regarding the packets.

3. A switch as described in Claim 2 wherein the tolerating mechanism has a striper which sends portions of packets as stripes to the n fabrics to which they correspond, and which calculates a checksum of the packet and adds it to the packet before it is striped.

4. A switch as described in Claim 3 wherein the tolerating mechanism has an unstriper which receives the stripes

and parity data from the fabrics, calculates the parity data from the stripes received, and compares the parity data received with the parity data calculated to determine if one of the fabrics has failed.

5. A switch as described in Claim 4 wherein the unstriper calculates the checksum for each fabric, replaces the data from each fabric in turn, and compares the calculated checksum for each fabric to the checksum calculated for each fabric received with the packet calculated before the packet is striped, if the unstriper has determined one of the fabrics has failed, and recovers the stripe from the fabric that has failed from the other stripes.

6. A switch as described in Claim 5 wherein the checksum is 16 bits.

7. A switch as described in Claim 6 wherein each fabric has an aggregator which receives the stripes from the port card, a memory controller in which the stripes are stored and a separator which sends the stripes back to the port card.

8. A method for switching packets comprising the steps of:

receiving packets at a port card from a network of a switch;

sending to fabrics of the switch portions of the packets as stripes from the port card;

switching the portions of the packets with the fabrics;

sending back to the port card the portions of the packets as stripes from the fabrics; and

sending correct packets with the port card to the network even though one of the fabrics has a failure.

9. A method as described in Claim 8 wherein the sending to fabrics of the switch step includes the step of sending to n respective fabrics n stripes of portions of the packets, where n is greater than or equal to 2 and is an integer, and where one of the fabrics is a parity stripe having parity data concerning the packet to a parity fabric.

10. A method as described in Claim 9 wherein before the sending the n stripes step, there is the step of calculating a check sum of the packet with a striper and adding it to the packet before it is striped.

11. A method as described in Claim 10 wherein the sending back to the port card step includes the step of receiving at an unstriper of the port card the stripes and parity stripe from the fabrics, calculating with the unstriper the parity data from the stripes received, and comparing the parity data received from

the parity stripe with the parity data calculated by the unstriper to determine if one of the fabrics has failed.

12. A method as described in Claim 11 including after the comparing step, there is the step of calculating with the unstriper the check sum, replacing the data from each fabric in turn, comparing the calculated check sum for each fabric to the check sum received with the packet calculated before the packet is striped, identifying which fabric has failed, and recovering the stripe from the fabric that has failed from the other stripes.

13. A method as described in Claim 12 wherein the check sum is 16 bits.

14. A method as described in Claim 13 wherein the switching step includes the step of receiving the portions of the packets as stripes at an aggregator of the fabric, and storing the portions of the packets in a memory controller of the fabric.

15. A method as described in Claim 14 wherein the sending back to the port card step includes the step of sending with a separator of the fabric the portions of packets in the memory controller as stripes back to the unstriper of the port card.

16. A method for switching packets comprising the steps of:

receiving packets at a port card from a network of a switch;

sending to fabrics of the switch portions of the packets as stripes from the port card;

switching the portions of the packets with the fabrics;

sending back to the port card the portions of the packets as stripes from the fabrics;

determining one of the fabrics has a failure; and

determining which one of the fabrics has the failure.